

problem in synchronizing the illumination with the collection of the reflected light by the camera.

Please replace the paragraph beginning three lines from the bottom of page 6 with the following paragraph:

The camera can be an InGaAs FPA, such as offered by Sensors Unlimited which operates in the spectral range of 700-1700 nm, or an InSb Camera such as offered by Santa Barbara Focalplane that can cover the entire near infrared range and beyond. The spatial resolution of the image is defined by the field of view of each of the ~~[[sensor (pixel)]]~~ sensors (pixels) in the array. These cameras are available with more than 640.times.512 pixels in the array. The camera electronics controls the recording of the images and can provide time gating. The data acquisition should be synchronized with the firing of the laser, preferably such that the frame rate will be equal with the pulse repetition rate of the laser. The time gate of the camera will be adjusted to capture each reflected signal from the target.

Please replace the paragraph beginning at line ¹⁷~~18~~ on page 7 with the following paragraph: 3/5/07 *24*

In this application the OPO is tuned over a wavelength range in the NIR associated with the spectral features of the active pharmaceutical ingredients and the excipient mixture, and the reflected light from the target is collected and recorded at each wavelength. The collected data provides the reflectivity at each point of the target (as set by the spatial resolution) for each wavelength. As described above, the data has three dimensions: two spatial and one that carries spectral information to provide a hyper-spectral cube. The data may also be presented to the user in the form of a two-dimensional picture, color-coded to represent the distribution of the different materials in the tablet.

Amendments to the Specification:

Please amend the paragraph beginning at line ²⁰~~19~~ on page 1 with the following paragraph: 3/5/07 *JD*

In cases where spatial information is required a typical solution is to perform multiple single-point measurements over different areas of the target, or scan the target. The resolution of the image is determined by the field of view of the detector. The main drawback of this technique is the length of time ~~[[is]]~~ it takes to compile the multiple points that make up a spectral image, which limits the practicality of imaging instruments utilizing this approach.

Please replace the paragraph beginning two lines from the bottom of page 1 with the following paragraph:

It is also known to use detector arrays to obtain spectral data. In a typical prior art instrument broadband near infrared light source may be used to illuminate a target. The light from the target is passed through either a set of fixed wavelength transmission ~~[[filers]]~~ filters or a tunable filter that passes only a narrow spectral band. The light is ~~[[than]]~~ then collected by an imaging detector array, which operates in the near infrared spectral range. The imaging array records the image of the target at a number of wavelengths and the collected data is used to construct a hyper-spectral cube consisting of the spectral responds of each point as a function of illumination wavelength. The performance of such prior art systems is limited by numerous factors:

- The intensity of a wideband source within a spectral band is inversely proportional to the bandwidth, therefore in order to increase the signal intensity of a given source the spectral resolution must be sacrificed.
- The use of discrete filters provides a limited data set consisting only of a small set of discrete wavelengths.
- Tunable filters, such as a liquid crystal tunable filter, limit the field of view of the camera as well as the intensity of the collected signal.